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OCCURRENCE OF COMMON DISEASES AMONG THE STAFF OF THREE RESIDENTIAL HALLS OF UNIVERSITY OF DHAKA

Rimi Farhana Zaman, Hamida Khanum*, Mandira Mukutmoni and Mahmudul Hasan

Department of Zoology, University of Dhaka, Dhaka-1000, Bangladesh

Abstract: A cross-sectional study was conducted to know the occurrence of common diseases in staff and their family members in three residential halls of University of Dhaka. The individuals were interviewed about the diseases they encountered recently. Among 270 respondents, the highest occurrence of diarrhea (44.44%) was recorded among 16-30 years old staff of Dr. Muhammad Shahidullah hall. Peak occurrence of sinusitis (37.25%) was observed among the staff aged 31-45 years old of the same hall. The highest occurrence of eczema (37.5%) was observed among the staff aged 46-60 years old of Amar Ekushey hall. Diarrhoea was prevalent among the groups who preferred food from hotel comprising the highest prevalence (72.73%) in Dr. Muhammad Shahidullah hall ($p = 5.024$). The uppermost occurrence of jaundice was recorded among the staff of Fazlul Huq Muslim hall who used to take food from outside hotels (71.43%).

Key words: Prevalence, common diseases, staff, residential halls

INTRODUCTION

Public health situation in Bangladesh has improved considerably in recent years. Even though where people live in slums and impoverished areas with poor economy are prone to many diseases like typhoid, diarrhoea, malaria, dengue, scabies, worm infections and many others including nutritional deficiency. The occurrence of most of the diseases are dependent on various social, environment and economic factors (Shah *et al.* 2002, Kahhar 2012, Noor and Munna 2015).

To our knowledge residential halls of Dhaka University have working staff from different culture and socio economic status and their relation with the inmate of the hall are very close. Therefore, it was decided to know the prevailing diseases among the staff and their family members in three halls of Dhaka University.

Infectious diseases are an inevitable global threat. The occurrence as well as the rise and reappearance of a certain disease depend on the environmental and economic context (Kahhar 2012). Public health has improved markedly in Bangladesh over the past three decades. Globally, more than one billion people are infected annually by influenza viruses, whereas, most of them are from

*Author for correspondence: <hamida_khanum@yahoo.com>.

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developing countries including Bangladesh (Kamlangdee *et al.* 2014). There are several relevant communicable diseases, including skin diseases, ectoparasitic diseases (acne, eczema, wart, scabies, pediculosis, pyoderma, boil, etc.), vector borne diseases (filaria, malaria, dengue, leishmenia, etc.), intestinal parasitic diseases (ascariasis, amoebiasis, giardiasis, cryptosporidiosis, hookworm infection etc.). Human, animals and foods are all carriers of pathogens organisms that can transfer an infectious illness from one host to another. A simple touch or exchange of fluids can be all it takes to spread a disease from one individual to another (CIESIN 1994, ISFHH 2012).

Bangladesh has experienced a variety of diseases caused by natural dissemination of an array of pathogenic organisms into the environment (Noor and Munna 2015). Vector borne diseases; dengue, chikungunya, bacterial diseases like typhoid, acne, fungal diseases, viral influenza, jaundice, diarrhoeal discomfort these troubles are common in Bangladesh. The greatest global threat to public health is degraded environment. Threats to the environment include global warming, habitat destruction, air pollution and industrial toxins. Moreover, humans have become complacent, promoting drug-resistant strains through the overuse of antibiotics and rejecting the vital significance of vaccinations (Saha *et al.* 2002). Better management of water resources to reduce the transmission of different diseases including vector-borne diseases and to make water bodies safe for recreational and other uses can save many lives (Ferguson *et al*. 2000, WHO 2010).

The present study was conducted (i) to determine the occurrence of common diseases among the staff in the residential halls of Dhaka University and (ii) to demonstrated the association of the diseases with risk factors like food habits, age and hygienic practices.

MATERIAL AND METHODS

A cross sectional study conducted among the staff and their family of Fazlul Huq Muslim, Dr. Muhammad Shahidullah and Amar Ekushey hall of University of Dhaka during February, 2015 to March, 2016. The age of the subjects ranged were from 16 to 60. A self-administered questionnaire was prepared both in Bengali and in English to record data. A total of 270 individuals from the study area were interviewed; 100 from Dr. Muhammad Shahidullah hall, 100 from Fazlul Huq Muslim hall and 70 from Amar Ekushey hall. Staff were asked about the diseases they have recently encountered or suffering from.

Prescriptions and test results of the subjects were also retrieved. SPSS version 16 was used to compile the occurrence of diseases between age groups using $x2$ statistics. Values of $p < 0{\cdot}05$ were considered statistically significant.

RESULTS AND DISCUSSION

Among the staff aged 16 - 30 of Dr. Muhammad Shahidullah hall, occurrence of influenza was the highest (37.04%) following the age group 31 - 45 of Fazlul Huq Muslim hall (28.57%) (Table 1). Studies on influenza infections documented that in Bangladesh more than 50% of the child respiratory infections are caused by influenza viruses (Bhuiyan *et al.* 2014).

The highest occurrence (18.52%) of chicken pox was observed among the young staff (16 - 30 years old) of Fazlul Huq Muslim hall and the lowest was of Amar Ekushey hall (Table 1). Saha *et al.* (2002) found seropositivity of chicken pox was the highest among neonates (83%), declined sharply to 19% in those aged 7 - 12 months and thereafter rose steadily with age until a plateau of 85% reached after the age of 16 years. Age specific risks of chicken pox was estimated through his study. In chicken pox, the risk of death is 25 times more and the risk of developing encephalitis is eight times higher in adults than in children (Longfield *et al.* 1990).

Typhoid fever is a major cause of death worldwide with a major part of the disease burden in developing regions such as the Indian sub-continent. Bangladesh is part of this highly endemic region, yet little is known about the spatial and temporal distribution of the disease at a regional scale. In the present study, the young staff (16 - 30) of Amar Ekushey hall displayed the highest occurrence of typhoid (36.84%). Aged staff of the same hall did not encounter typhoid (Table 1). Dewan *et al*. (2013) conducted a study in Dhaka Metropolitan area and found the median age of the typhoid cases was 14 years.

Gastric ulcer was almost absent among the young staff (16 - 30) except of the Fazlul Huq Muslim hall (7.41%). The highest occurrence (27.78%) was observed among the staff aged 46 - 60 years old of Fazlul Huq Muslim hall followed by the group aged 31 - 45 of the same hall (25%) (Table 1).

As age advances, the immune system undergoes profound remodeling and decline, with major impact on health and survival (Weiskopf *et al.* 2009). This immune senescence predisposes older adults to a higher risk of acute viral and bacterial infections Ghosh *et al*. (2017) conducted a study to see the present prevalence of peptic ulcer at endoscopy and to identify changing trends in the occurrence of peptic ulcer in Bangladesh. Duodenal ulcer and benign gastric ulcer were found in 415 (7.4%) and 184 (3.28%) patients, respectively and gastric outlet obstruction due to peptic ulcer was found in 23 (0.40%) patients.

Acne was almost absent among the aged staff (46 - 60) except Fazlul Huq Muslim hall (11.11%) in the present study. The highest occurrence of acne was observed among the staff of aged 16 - 30 of Amar Ekushey hall (52.63%). Occurrence of eczema was also the highest (37.5%) among the staff of the same

Table 1. Occurrence of common diseases among the staffs of three residential halls

Name of disease	No. of people affected	Prevalence (%)	No. of people affected	Prevalence (%)	No. of people affected	Prevalence (%)
Fazlul Huq Muslim Hall						
Diseases	16-30 years N = 54		31-45 years N = 28		46-60 years N = 18	
Influenza	9	16.67	8	28.57	2	11.11
Jaundice	17	31.48	6	21.43	2	11.11
Chicken pox	10	18.52	5	17.86	1	5.56
Typhoid	9	16.67	2	7.14	2	11.11
Diarrhoea	14	25.92	5	17.86	4	22.22
Gastric ulcer	4	7.41	7	25	5	27.78
Acne	14	25.92	4	14.28	2	11.11
Eczema	5	9.26	10	35.71	4	22.22
Migraine	16	29.63	6	21.43	1	5.56
Sinusitis	4	7.41	3	10.71	3	16.67
Dengue	5	9.26	8	28.57	4	22.22
Dr. Muhammad Shahidullah Hall						
Diseases	16-30 years N = 27		31-45 years N = 51		46-60 years N = 22	
Influenza	10	37.04	11	21.57	3	13.64
Jaundice	9	33.33	12	23.53	2	9.09
Chicken Pox	4	14.81	7	13.73	1	4.55
Typhoid	3	11.11	5	9.80	0	0
Diarrhoea	12	44.44	14	27.45	2	9.09
Gastric Ulcer	0	0	6	11.76	5	22.73
Acne	11	40.74	13	25.49	0	0
Eczema	3	11.11	15	29.41	3	13.64
Migraine	15	55.56	16	31.37	4	18.18
Sinusitis	9	33.33	19	37.25	0	0
Dengue	8	29.63	12	23.53	0	0
Amar Ekushey Hall						
Diseases	16-30 years N = 19		31-45 years N = 43		46-60 years N = 8	
Influenza	4	21.05	11	25.58	1	12.5
Jaundice	3	15.79	4	9.30	1	12.5
Chicken Pox	2	10.53	3	6.98	0	0
Typhoid	7	36.84	6	13.95	0	0
Diarrhoea	6	31.58	16	37.21	2	25
Gastric Ulcer	0	0	7	16.28	1	12.5
Acne	10	52.63	13	30.23	0	0
Eczema	2	10.53	11	25.58	3	37.5
Migraine	4	21.05	10	23.26	1	12.5
Sinusitis	0	0	3	6.98	2	25
Dengue	4	21.11	8	18.60	0	0

hall aged 46 - 60 (Table 1). Prevalence of skin diseases can be influenced by several factors including geographical and cultural factors (Evers *et al.* 2005). One of these factors may be cleansers used in daily life. Frequency of bathing or skin cleansing continues to increase along with improvement of basic hygiene practices globally. Haque and Zaman (2017) conducted a study in Rajshahi and found that mean age of the patients was around 45 years for chronic eczema. Mean age of acne was around 20 years indicating that young people were more vulnerable to acne than to the other diseases.

Among the staff of Dr. Muhammad Shahidullah hall, aged 15 - 30 and 31 - 45, migraine was observed; 55.56 and 31.37%, respectively (Table 1). Migraine is manifested by some symptoms in terms of tiredness, difficulty in concentrating, stiff neck, mood changes and gastrointestinal (GI) symptoms of nausea, vomiting, abdominal pain and diarrhoea preceeding the typical headache occurrence (Kelman 2004). Hence, the highest occurrence of diarrhoea was observed among the staff aged 16 - 30 of Dr. Muhammad Shahidullah hall (44.44%) followed the staff aged 31 - 45 of Amar Ekushey hall (37.21%) (Table 1).

Chronic sinusitis is a common problem and occurs quite frequently in people with allergies. A large number of people with chronic sinusitis are actually suffering from fungal sinus infections, which would not get better with typical antibiotics (Ferguson *et al.* 2000). In the present study, the highest occurrence of sinusitis was observed among the middle aged (31 - 45) staff of Dr. Muhammad Shahidullah hall (37.25%). Mohammadi *et al.* (2017) conducted a study in medical centers of Iran and found 27 out of 100 suspected cases (27%) had fungal sinusitis.

Among the staff aged 16-30 of Fazlul Huq Muslim hall, occurrence of dengue was the highest (29.63%) followed the staffs aged 31 - 45 (28.57%) of Dr. Muhammad Shahidullah hall (Table 1). Nearly half of the world's population is infected by vector-borne diseases, resulting in high morbidity and mortality. The distribution of the incidence of vector-borne diseases is grossly disproportionate, with the overwhelming impact in developing countries located in tropical and subtropical areas. Dengue fever (DF) and dengue haemorrhagic fever (DHF) are now endemic in Bangladesh with outbreaks being reported quite frequently. Sharmin *et al.* (2013) led a cross sectional study on clinically suspected dengue patients from different hospitals of Dhaka city and found that patients between 16 - 30 years were the most vulnerable age group.

Diarrhoea remains one of the major causes of death in Bangladesh. In the present study, the highest occurrence of diarrhoea (44.44%) was observed among the young staff aged 16 - 30 of Dr. Muhammad hall. The next highest

was observed among the staff aged 31 - 45 years old of Amar Ekushey hall (37.21%) (Table 1). Chowdhury *et al.* (2015) conducted a study to assess diarrhoeal disease risk for diarrhea in Dhaka, Bangladesh. Of 316,766 individuals, 10% were young children (<5 years). The prevalence of diarrhoea was 16 per 1000 persons among all ages. Occurrence of diarrhea was significantly higher ($p = 0.003$) among younger males (<15 years) compared to that among younger females. In contrast, prevalence of diarrhoea was significantly higher ($p < 0.0001$) among older females (≥ 15 years) compared to that among older males. In the present study, diarrhoea was prevalent among the groups who preferred food from hotel comprising the highest prevalence (72.73%) in Dr. Muhammad Shahidullah hall ($X^2 = 24.3149$, $p = 5.024$) (Table 2). As diarrhea is acquired via contaminated water and foods, water-related factors are very important determinants of diarrhoea occurrence (WHO 2007).

Table 2. Occurrence of diarrhoea and jaundice according to food preference

Dr. Muhammad Shahidullah Hall						
Food preference	Diarrhoea			Jaundice		
	N	n	%	N	n	%
Canteen	74	18	24.32	74	15	20.27
Homemade	15	2	13.33	15	2	13.33
Hotel	11	8	72.73	11	6	54.55
Fazlul Huq Muslim Hall						
Food preference	Diarrhoea			Jaundice		
	N	n	%	N	n	%
Canteen	60	14	23.33	60	15	25
Homemade	33	5	15.15	33	5	15.15
Hotel	7	4	57.14	7	5	71.43
Amar Ekushey Hall						
Food preference	Diarrhoea			Jaundice		
	N	n	%	N	n	%
Canteen	48	17	35.42	48	5	10.42
Homemade	14	2	14.29	14	1	7.14
Hotel	8	4	50	8	3	37.5

The highest occurrence of jaundice was recorded among the staff aged 16 - 30 of Dr. Muhammad Shahidullah hall (33.33%) followed the same aged group of Fazlil Huq Muslim hall staffs (31.48%) (Table 1). The staff of Dr. Muhammad Shahidullah hall, who preferred food from hotel was marked as a jaundice prevalent group (54. 55%) (Table 2). Jaundice is a complex disease. Jaundice is actually the high bilirubin level in the body. The causes of various variants of jaundice is either acquired or congenital (Abbas *et al.* 2016, Dutta *et al.* 2013). Rahman *et al.* (2014) conducted a study in Mirpur area and observed that

occurrence of jaundice was the lowest among the people aged 18 - 30 (27.6%), rising more or less steadily with age peaking at 52.9% among those above 60 years old.

In Bangladesh, a number of people still maintain a poor hygiene quality. Knowledge about the consequent spread of diseases is very scanty sometimes (Kahhr 2012; WHO 2010). Due to this inadequate knowledge, people commonly consume large quantities of antibiotics not prescribed by physicians (Weiskop *et al*. 2009). By contrast, in the United States and Europe, the levels of resistance of bacterial pathogens against antibiotics are lower because of inflexibility in prescription (Acharjee *et al.* 2013). Proper therapy with physician's authorizations can lessen treatment difficulties (Dutta *et al.* 2013).

CONCLUSION

It can be concluded that common disease among the staff are still existing in our country under certain prevailing conditions, such as lack of personal hygiene, under nutrition, lack of good sanitation and pure drinking water etc. The first step to reduce infections is to upsurge public alertness of sanitation. Knowledge about insanitary handling of water and food are vital. The baseline information on the occurrence of common diseases will help the researcher to initiate further studies and also the planners and policy makers to take the appropriate preventive measures.

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